MEMORANDUM

To: Reviewers

Through: Dan Olson, Administrator, Air Quality Division
Mike Stoll, Operating Permit Program Manager

From: Kurt Smith, Air Quality Engineer

Subject: Draft Operating Permit 31-084 for FMC Wyoming Corporation, FMC Granger Caustic Soda

Date: January 22, 2004

Attached for your review is the draft renewal Wyoming Air Quality Standards and Regulations (WAQSR) Chapter 6, Section 3 operating permit for the FMC Wyoming Corporation, FMC Granger Caustic Soda facility.

The facility produces a 50 weight percent sodium hydroxide (NaOH) product, commonly known as caustic soda, by combining mine water from the nearby trona mine and lime (CaO) brought to the facility by truck. Mine water rich in sodium carbonate (Na_2CO_3) and sodium bicarbonate ($NaHCO_3$) is combined with lime in a lime slaker to produce a sodium hydroxide slurry. After slaking, the slurry is transferred to causticizing vessels for additional reaction time. Overflow from the causticizing vessels is filtered and then concentrated from a 9 percent to a 50 percent sodium hydroxide solution using evaporators that heat the filtrate to remove excess water. The resulting concentrated sodium hydroxide solution is transferred to holding tanks to cool. The solution is then filtered to remove precipitates formed during the cooling process and the final caustic soda product is pumped to a rail car loadout facility for shipment off-site. The capacity of the plant is approximately 180,000 tons per year (dry basis) of 50 weight percent caustic soda solution.

The principal emission source at the facility is a 200 MMBtu/hr gas-fired boiler which is used to provide the heat required for the causticizing process. Additional sources at the plant include a wet scrubber controlled lime slaker vent, a baghouse controlled vent from the 2000 ton lime storage silo/bin, an emergency generator engine, and a process cooling tower.

WAQSR Chapter 6, Section 2 Permit History

wv-YN1 (4/9/01) waiver was issued for the temporary transloading system to transfer lime feedstock from rail to truck. The waiver expired on 8/1/02.

Permits CT-945 (9/27/91) and OP-255 (6/9/95) were issued to construct and operate the caustic soda production facility consisting of the gas-fired boiler, lime silo/bin, lime slaker, and carbon regenerator incinerator. The permittee decided not to construct the carbon regenerator incinerator, and conditions originally included in CT-945 for the incinerator were omitted in OP-255 as well as the requirement to participate in a regional visibility study.

Applicable Requirements

Applicable requirements include the opacity limits from WAQSR Chapter 3, Section 2, the permit limits and requirements from WAQSR Chapter 6, Section 2 permit OP-255, and the limits and requirements from 40 CFR 60 Subpart Db. In this permit renewal, the Division clarifies that excess emissions as defined in Subpart Db, as well as the NO_X limitations defined in permit OP-255 must be reported in the quarterly excess emission reports.

The facility is not subject to 40 CFR 60 Subpart OOO requirements because lime (CaO) is not defined as a nonmetallic mineral.

Periodic Monitoring

Where periodic monitoring is not specified by an applicable requirement, periodic monitoring methods are established according to the Division's guidance.

For visible emissions from the wet scrubber controlled lime slaker vent the permittee will conduct weekly monitoring to detect the presence of visible emissions.

Monitoring of NO_X emissions from the boiler is accomplished by a continuous emissions monitor (CEM) in accordance with 40 CFR 60 Subpart Db. In lieu of periodic monitoring for visible emissions from the boiler, the permittee will monitor the type of fuel used to ensure natural gas is the sole fuel source for this unit.

Compliance Assurance Monitoring

Compliance Assurance Monitoring (CAM) does not apply to the wet scrubber controlled lime slaker vent, since the emissions before the consideration of controls are below major source levels.

Compliance Assurance Monitoring for particulate matter emissions from the baghouse controlled lime storage silo/bin vent is accomplished by daily monitoring for visible emissions from the source. Any visible emissions during the daily observations constitute an excursion of the indicator and require corrective action. The daily observations also serve as periodic monitoring for visible emissions from this source.

The FMC Granger Caustic Soda facility is currently not in operation. As part of the CAM plan for the lime storage silo/bin vent baghouse, the permittee has requested a monitoring schedule in the event that startup of the facility and the issuance of the operating permit renewal occur at nearly the same time. If the facility is in operation at the time the operating permit renewal is issued, the CAM schedule incorporated into the operating permit will allow a period of 30 days after permit issuance before daily monitoring under CAM is required. This will allow time for the permittee to train plant personnel to perform CAM monitoring. Should the facility start up after the issuance date of the operating permit renewal, any training necessary to accomplish CAM monitoring will occur before plant startup, and monitoring under CAM will commence upon startup.